NEWS RELEASE

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Professional Guide to Non-Destructive Evaluation of Wood Now Available

MADISON, Wis. – The USDA Forest Service Forest Products Laboratory (FPL) has assembled the most comprehensive publication ever regarding the nondestructive testing and evaluation (NDE) of wood materials.

Geared toward industry professionals, Nondestructive Evaluation of Wood, offers guidance, analysis, and practical application of NDE techniques, including the use of lasers, x-rays, and ultrasound, to assess and report on the condition and integrity of wood. These techniques, which do not damage the objects being evaluated, can be used on structures, bridges, standing trees, and even historic artifacts.

“Nondestructive testing of wood is an exciting area of research and has the potential to greatly enhance the wise use of wood,” said Bob Ross, the book’s editor, an author or co-author of several chapters, and a supervisory research general engineer at FPL. “Wood, in any form—trees through timber bridges—is highly variable because of how it grows, where it comes from, and what it is exposed to. Nondestructive evaluation technologies are the scientific foundation for all assessment and grading of wood-based materials,” Ross added

The book’s 13 chapters contain information from many of the industry’s foremost experts in the world, on topics such as static bending, transverse vibration, resistance drilling, piezoelectricity, acoustic assessments, and laser methodology. The book also provides information concerning more traditional evaluation techniques, such as machine grading, and advice for practical application in urban environments.

“To make the best, highest use of our forest resources,” Ross explained, “we need to have technologies that help us assess what the quality of a particular tree, log, or piece of lumber is. We can then utilize it appropriately. One of the fastest growing sectors of the wood products industry—engineered wood products—relies heavily on the use of nondestructive evaluation technologies.” NDE techniques described in the book have been employed around the world in many projects:

- Use of sound waves to evaluate the quality of timber in National Forests
- Use of ultrasound technology to locate decay in urban trees
- Evaluation of structural performance potential of logs, veneer, lumber, and timbers before installation
- Inspection of historic covered bridges
- Inspection of historic artifacts,including the USS Constitution and a 2,500-year-old mummy coffin from Egypt

“This landmark book continues the proud legacy we have established at the Forest Products Laboratory as a cutting-edge scientific institution," said FPL Director Michael T. Rains. “It represents years of research across the full spectrum of scientific endeavor, from technical journals and research reports, to the proceedings from various symposia. The book will serve as a guide to the public and a touchstone for future generations of scientists and land managers, as we continue to find better ways to utilize one of our planet’s most cherished and renewable resources—wood.”

The complete publication can be found at:
http://www.fpl.fs.fed.us/documnts/fplgtr/fpl_gtr238.pdf

For over 100 years, the Forest Products Laboratory’s work with academia, industry, and other government agencies has led to ground-breaking discoveries with great benefit to the public. Additional information on FPL's research is available at www.fpl.fs.fed.us

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